AMENDMENTS TO THE CLAIMS

IN THE CLAIMS:

A complete set of claims is provided below:

1.-3. (Canceled)

4. (Previously Presented) The receiver of Claim 6, wherein *M* does not equal *N*.

5. (Previously Presented) The receiver of Claim 6, wherein a new output value is computed for each channel each time said converter receives a new input value.

6. (Currently Amended) A receiver comprising a time-to-frequency converter, said time-to-frequency converter configured to receive a stream of data samples and calculate *M* streams of output values for *M* communication channels, said converter configured to calculate each of said output values using *N* input values, wherein the value of *N* is selected on a channel-by-channel basis **such that a first channel uses a value for N that is different from a value of N used by a second channel**.

7. (Previously Presented) The receiver of Claim 6, wherein said receiver is configured to receive communication signals from a power line network.

8. (Previously Presented) The receiver of Claim 6, wherein said receiver is configured to receive communication signals from a wireless network.

9. (Previously Presented) The receiver of Claim 6, wherein *N* defines a basis function length.

10. (Previously Presented) A receiver comprising a time-to-frequency converter, said time-to-frequency converter configured to receive a stream of data samples and calculate *M* streams of output values for *M* communication channels, said converter configured to calculate each of said output values using *N* input values, further comprising an equalizer configured to equalize a data value for a first channel, said equalizer configured to determine equalization parameters by examining a packet header.

11.-23. (Canceled)

24. (Original) A communication receiver configured to receive data transmitted on a plurality of carriers, comprising:

a sub-band filter for separating a received analog signal into a plurality of separate sub-band signals corresponding to a plurality of sub-bands, where at least one of said sub-bands comprises a plurality of sub-channels, said plurality of sub-channels comprising a first sub-channel and a second sub-channel;

an analog to digital converter configured to convert a first sub-band signal into a first sub-band digital data stream;

a first sliding-window transform configured to transform said first sub-band digital data stream into a first channel data stream;

and a second sliding-window transform configured to transform said first sub-band digital data stream into a second channel data stream.

25. (Original) The communication receiver of Claim 24, wherein said receiver is configured to receive communication signals from a power line network.

26. (Original) The communication receiver of Claim 24, wherein said receiver is configured to receive communication signals from a radio transmission network.

27. (Original) The communication receiver of Claim 24, wherein said receiver is configured to receive communication signals from a wireless network.

28. (Original) The communication receiver of Claim 24, wherein said receiver is configured to receive communication signals from a wired network.

29. (Original) The communication receiver of Claim 24, wherein said sub-band filter comprises a bandpass filter.

30. (Original) The communication receiver of Claim 24, wherein said sub-band filter comprises a surface acoustic wave filter.

31. (Original) The communication receiver of Claim 24, wherein an amplitude of at least one of said sub-band signals is adjusted by an automatic gain control.

32. (Original) The communication receiver of Claim 24, wherein said first sliding-window transform converts said sub-band digital data stream into at least one frequency-domain digital data stream.

33. (Original) The communication receiver of Claim 24, wherein said first sliding window transform uses N time-domain samples from said sub-band digital data stream to generate M frequency domain output values corresponding to M sub-channels.

34. (Original) The communication receiver of Claim 33, wherein M is greater than N.

35. (Original) The communication receiver of Claim 33, wherein M is less than N.

36. (Original) The communication receiver of Claim 33, wherein N is calculated on a sub-band by sub-band basis depending on a carrier-frequency spacing for each sub-band.

37. (Original) The communication receiver of Claim 24, wherein said first sliding window transform comprises CORDIC algorithm.

38. (Original) The communication receiver of Claim 24, further comprising a demodulator for demodulating said first channel data stream.

39. (Original) The communication receiver of Claim 24, further comprising a differential demodulator for demodulating said first channel data stream.

40. (Original) The communication receiver of Claim 24, further comprising a synchronizer configured to extract synchronization information from said first channel data stream and provide said synchronization information to a data aligner, said data aligner configured to bit-align said first channel data stream to produce an aligned data stream.

41. (Original) The communication receiver of Claim 40, further comprising at least one equalizer, said at least one equalizer configured to equalize said aligned data stream.

42. (Previously Presented) The communication receiver of Claim 41, further comprising a channel manager, said channel manager configured to receive equalization information from at least said at least one equalizer, said channel manager configured to provide amplitude equalization information to said automatic gain control.

43. (Previously Presented) The communication receiver of Claim 41, further comprising a channel manager, said channel manager configured to receive equalization information from at least said at least one equalizer, said channel manager configured to provide phase equalization information to a clock, said clock configured to provide a clock signal to said analog to digital converter.

44. (Previously Presented) The communication receiver of Claim 40, wherein said encoded data on said first sub-band is modulated using a first modulation scheme and wherein data on said second sub-band is modulated using a second modulation scheme, where said first modulation scheme is different from said second modulation scheme.

45. (Canceled)

46. (Original) The communication receiver of Claim 40, further comprising a spreading decoder.

47.-50. (Canceled)